the knowledge graph of journal

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AI Overview

A **journal knowledge graph** is a structured representation of scholarly literature that connects articles, authors, institutions, citations, and research topics as nodes and relationships in a graph database. Instead of relying on traditional keyword searches, these graphs map the semantic connections between scientific discoveries.

Key Components of a Journal Knowledge Graph

- **Entities:** The core subjects of the graph, such as research papers, authors, institutions, grants, scientific concepts, and datasets.
- **Relationships:** The links between entities, such as "cites," "written by," "funded by," "collaborates with," and "is a sub-topic of".
- **Ontologies:** The standardized schema layer that defines how categories relate to one another (e.g., A cites B, and B is about C).

How They Are Built

Constructing a journal knowledge graph typically involves the following pipeline, frequently powered by **Large Language Models (LLMs)** and natural language processing:

1. **Data Ingestion:** Gathering vast amounts of academic text from databases like PubMed, Crossref, or clinical trials.
2. **Knowledge Extraction:** Using extraction models to pull entities and facts from titles, abstracts, and full texts.
3. **Knowledge Fusion:** Merging extracted data and disambiguating entities (e.g., ensuring two different authors with the same name are properly separated).
4. **Knowledge Storage:** Saving the parsed metadata into graph databases (e.g., Neo4j) to be queried via **SPARQL** or graph algorithms.

Real-World Use Cases

- **Semantic Search & Discovery:** Allowing researchers to query hidden relationships (e.g., "Find papers that cite X and use a method related to Y").

- **Research Trend Analysis:** Tracking the evolution of specific fields, identifying emerging topics, and mapping cross-disciplinary collaborations.

Ask anything

if you are **trying to use an existing knowledge graph** to search literature? This will help me narrow down the tools, frameworks, or datasets you need.

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Open Research Knowledge Graph

The Open Research Knowledge Graph (ORKG) aims to **describe research papers in a structured manner**. With the ORKG, papers are easier to find and compare.

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Open Research **Knowledge Graph** (ORKG) is a structured **knowledge graph** for scholarly articles. It provides machine-readable data and helps researchers find relevant information.

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Knowledge graphs are **a collection of interlinked descriptions of entities** that put data into context and enable data analytics & sharing.

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Knowledge Graph - an overview

A **knowledge graph** (KG) can be defined as a system in which all entities (eg people, places, things) are stored in the form of connected graphs or linked data. Read more

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